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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/986,681	11/09/2001	Christophe Michot	13411.00020	5802

27160 7590 05/15/2003

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EXAMINER

KALAFUT, STEPHEN J

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 05/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/986,681

Applicant(s)

MICHOT ET AL.

Examiner

Stephen J. Kalafut

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6 and 26-59 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6 is/are allowed.
- 6) ☒ Claim(s) 26 and 29-59 is/are rejected.
- 7) ☒ Claim(s) 27 and 28 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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Claims 29-59 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase "heteroatom such as N, O, S, or P" is considered to have indefinite scope. The specification does not point out whether any heteroatom may be used, or only those equivalent to N, O, S, or P, and if the latter, what the equivalent atoms are. In claim 44, the term "low insertion potential" would also have indefinite scope. Thus, what oxides other than titanium spinel are contemplated cannot be ascertained. In claim 46, there is no antecedent for "the cation of the metallic salt". In claim 47, there is no antecedent for "at least one metallic salt", since neither this claim nor its parent claims 43 and 44 mentions a metallic salt. Claims 30-33 and 40-42 recite how the medium is used, as method steps within these claims, which are drawn to compounds. Whether the claims are to be construed as being drawn to a compound with an intended use, or to the process of using, is unclear. In claim 49, the term "high specific surface area" would also have indefinite scope. In claim 44, there is a listing of possible atoms for "M", but "M" does not appear in any of the cathode formulas.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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Claims 29, 31-33 and 40-42 are rejected under 35 U.S.C. 102(b) as being anticipated by either Roesky *et al.* (article "Phosphor- und Schwefelhydrazin-Verbindungen"), or Dhingra *et al.* ("Chemistry of Imidobis(sulphuryl fluoride): Part II...").

Roesky *et al.* disclose the compound $\text{NH}_4^+ [\text{N}(\text{SO}_2\text{F})_2]^-$, which is then used as a starter material to make various other compounds. Since the present claims do not require anything other than the imide compound to be present, this compound would constitute the present "medium". Since this compound falls within the present formula, it would be by itself nonflammable, and thus constitute a nonflammable medium, as in present claim 31. Claims 32, 33 and 40-42 are interpreted as reciting intended uses for the compound, which would not carry patentable weight, and thus not distinguish.

Dhingra *et al.* disclose compounds with the anion $[\text{N}(\text{SO}_2\text{F})_2]^-$ and cations such as CH_4N^+ , $\text{C}_6\text{H}_5\text{NH}_3^+$ and $(\text{C}_6\text{H}_5)_3\text{PH}^+$. Since the present claims do not require anything other than the imide compound to be present, these compounds would each constitute the present "medium". Since the compounds fall within the present formula, they would each be by itself nonflammable, and thus constitute a nonflammable medium, as in present claim 31. Claims 32, 33 and 40-42 are interpreted as reciting intended uses for the compounds, which would not carry patentable weight, and thus not distinguish.

Claims 26, 29-33, 40-43 and 48-52 are rejected under 35 U.S.C. 102(e) as being anticipated by Michot *et al.* (US 5,916,475).

Michot *et al.* disclose ionic compounds where the anion may be $(\text{FSO}_2\text{NSO}_2\text{F})^-$ and the cation may be a quaternary ammonium containing from 1 to 20 carbon atoms. See column 3,

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lines 17-45. The compound may be dissolved in an aprotic solvent or a solvating polymer (column 5, lines 11-42) which may be a copolymer and/or crosslinked. The compound may be used in a supercapacity (which would be a "storage system of the supercapacitor type) with poly 3-phenylthiophene (a conjugated polymer with three degrees of oxidation) and carbon having a high specific surface area, an electrochromic system, or a battery with lithium, a lithium alloy, or a lithium ion intercalated material as the anode (column 7, lines 10-38). Regarding claim 31, the compounds themselves would be nonflammable, being the same type as those presently claimed. Regarding claims 32, 33 and 40-42, recitations of intended use would not distinguish. Regarding claim 26, the present compounds may be used with a polar polymer or an aprotic liquid (column 5, lines 48-58) in an electrochemical reaction (column 10, lines 47-58).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Michot *et al.* (US 5,916,475) in view of Hamrock *et al.* (US 6,063,522).

While Michot *et al.* disclose lithium as an anode material (column 10, lines 55-57), they do not disclose the present cathode materials. Hamrock *et al.* disclose a nonaqueous cell with an imide electrolyte salt (column 2, lines 20-56) and various lithium transition metal oxide cathode materials, such as LiV_3O_8 , V_2O_5 and Co-doped Li_xNiO_2 (column 14, lines 49-58), which would

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be among the materials recited in this claim. Because this would show the compatibility of imide salts with these cathodes, and because these materials would provide different voltage amounts from the MnO_2 disclosed by Michot *et al.*, it would be obvious to use the cathodes of Hamrock *et al.* with the electrolytes of Michot *et al.* This rejection may be overcome by a showing of common ownership between Michot *et al.* and the present application.

Claims 27 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not disclose methods of actually using the present compounds in the reactions recited by these claims.

Claims 34-39, 45 and 53-58 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. The combination of the present imide salts with a chiral cation which allows enantioselective reactions, or with the present catalysts, with the additional anion of claim 45, or with a porous membrane within an electrochromic device. Claims 46 and 47 are do indefinite as to preclude determining their patentability.

Claim 6 is allowed. This claim also recites the additional anion.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686

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F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 29-33 and 40-42 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-44 of U.S. Patent No. 5,916,475.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of this patent, identified above as Michot *et al.*, recite the subject matter discussed above under §102, and thus overlap the present claims. For example, the present range of carbon atoms (1-18) falls within the patented range (1-20).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fanta *et al.* (US 6,350,545), Lamanna *et al.* (US 6,280,883) and Michot *et al.* (US 6,254,797) disclose various imide and sulfonylimide salts for battery cells.

The disclosure is objected to because of the following informalities: The specification includes some linguistic informalities. For example, the term "bear double bonds" appears on page 9, line 11. Appropriate correction is required.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen J. Kalafut whose telephone number is (703) 308-0433.

The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on (703) 308-2383. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

sjk
May 12, 2003

STEPHEN KALAFUT
PRIMARY EXAMINER
GROUP

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